

NextCloud App: Sync CSV Userlist

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PROBLEM

NextCloud, a file hosting and collaboration platform, offers a solution for educational institutions like FIU to manage digital resources and collaboration. However, FIU professors face a significant challenge with this system - the manual addition of students. Each student must be individually added to NextCloud, a process that is not only prone to human error but also remarkably inefficient. Mistakes such as misspelled names or incorrect user details during data entry can lead to complications in user identification and access control.

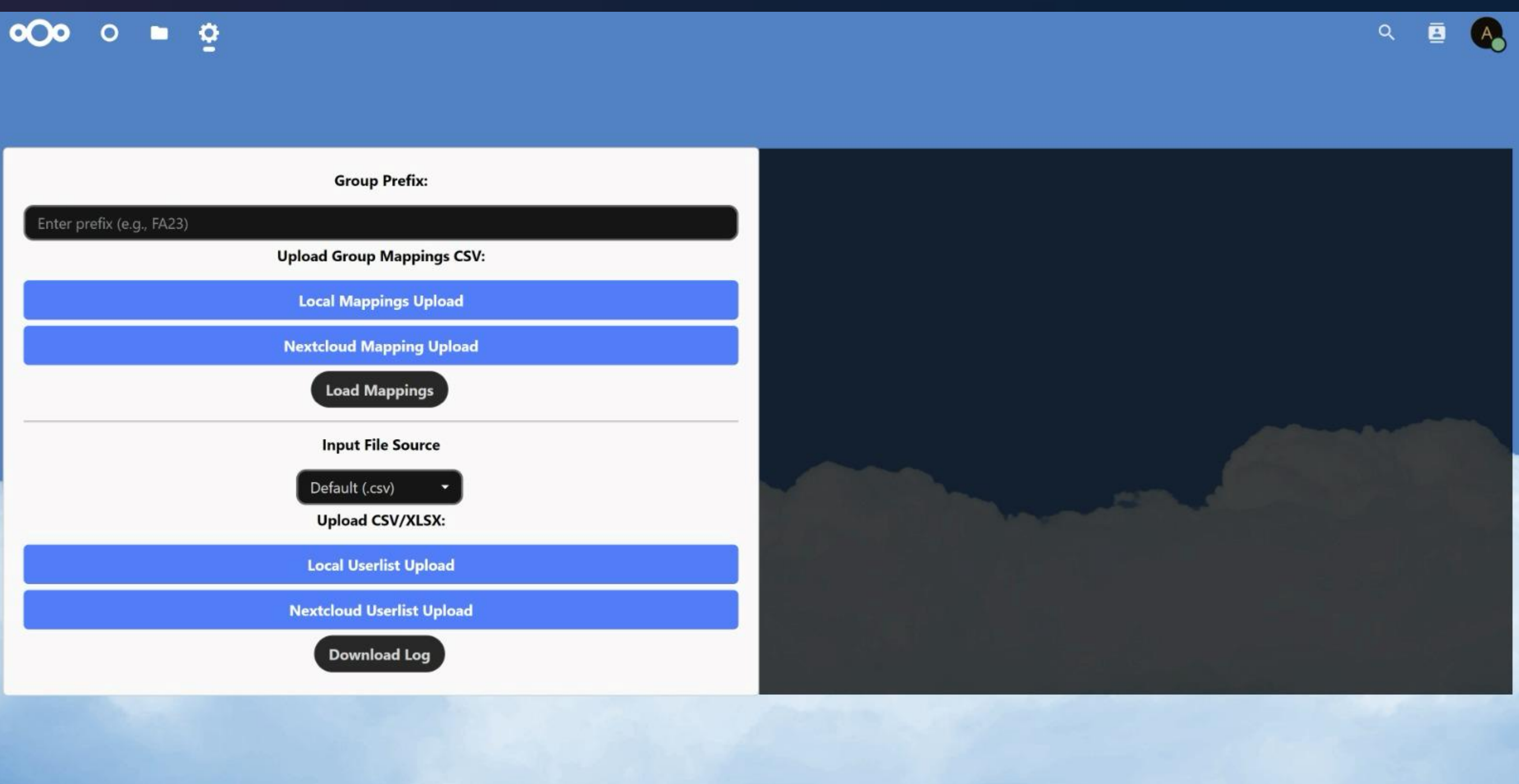
CURRENT SYSTEM

The existing manual process within the NextCloud app at FIU involves laborious steps for enrolling students into classes, characterized by several inherent inefficiencies:

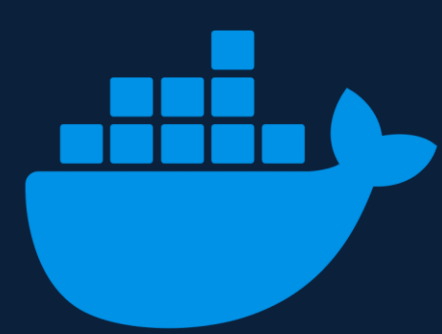
- **Time-Consuming Process:** Administrators manually enter each student's data, a procedure demanding considerable time and effort.
- **Prone to Human Error:** Data entry mistakes and omissions frequently occur, undermining the accuracy of student records.
- **Lack of Automation:** The absence of an automated system delays student integration into classes, impeding access to necessary resources.
- **Scalability Issues:** As the number of students increases, maintaining up-to-date, accurate records becomes increasingly challenging.

To address these issues, our application offers a transformative solution, streamlining the student integration process:

- **Automated Student Import:** Allows administrators to use existing student rosters to automatically create new Nextcloud users.
- **Automated Group Synchronization:** Automatically adds / updates a user's Nextcloud groups based on majors, courses, etc.

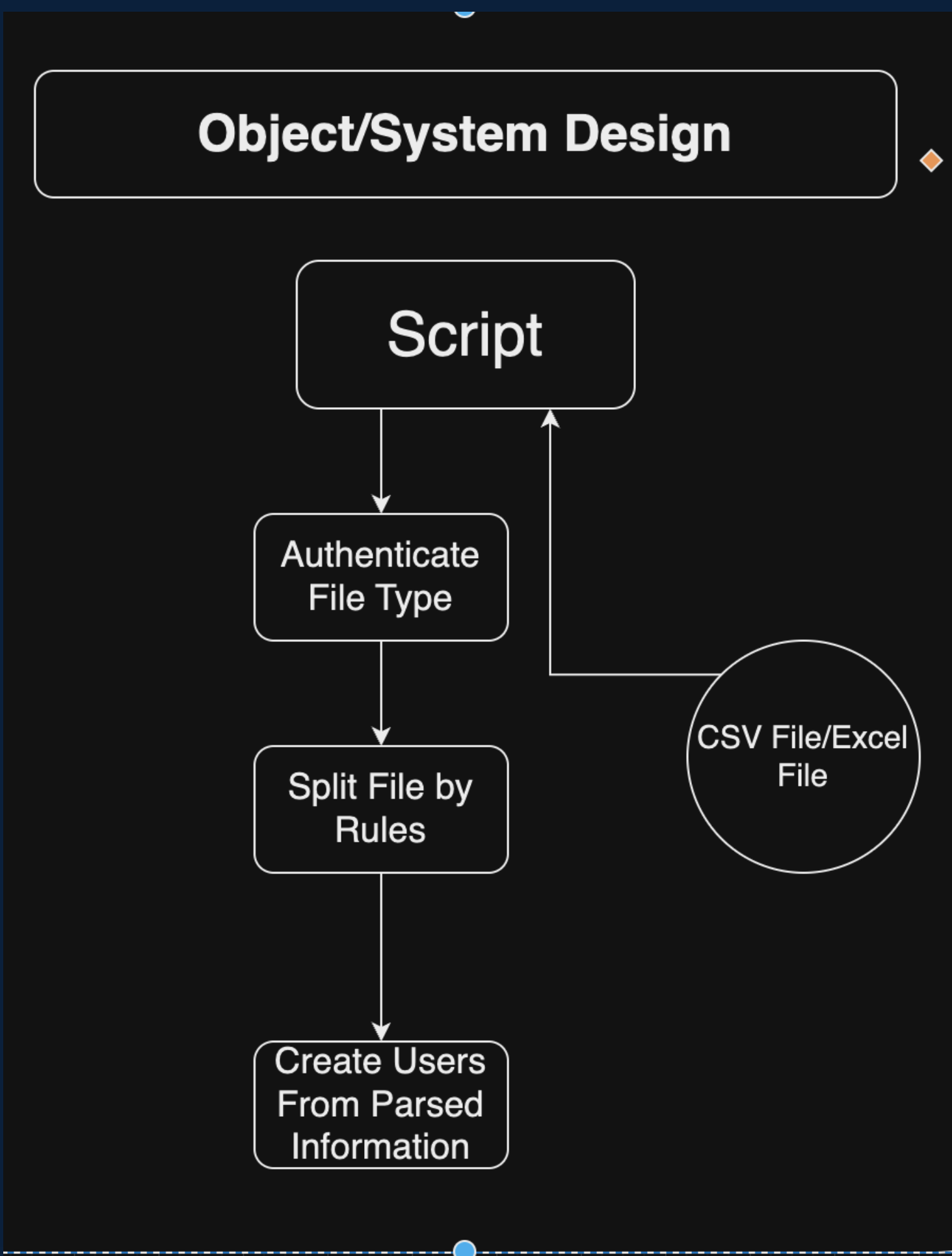


IMPLEMENTATION



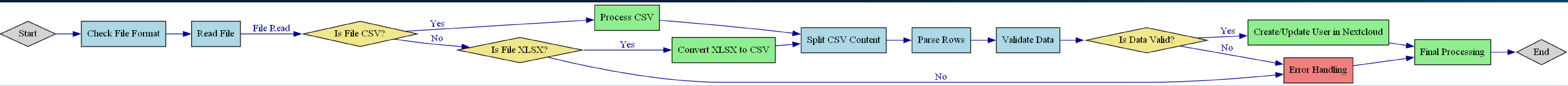
SYSTEM & OBJECT DESIGN

The system securely authenticates with NextCloud, handle diverse user attributes, and offers customization options. Error handling and logging mechanisms are crucial, and regular synchronization ensures up-to-date user information alignment. The object design for automating user implementation in NextCloud involves creating modular objects like UserImporter, UserManager, and Authentication. Each object has specific responsibilities, ensuring a clean and maintainable codebase.



SUMMARY

Our latest upgrade to the NextCloud user creation process introduces significant improvements in managing users. Central to its design is the innovative integration of automated user onboarding, allowing for the seamless addition of users through external CSV files. This feature significantly reduces the administrative workload and minimizes human error associated with manual data entry. The application also boasts a comprehensive README guide, offering users detailed instructions on setup, functionality, and troubleshooting. Key design elements include user-friendly default settings for synchronization folders and an intuitive interface that auto-updates prefixes. Overall, this application represents a significant leap forward in simplifying user management and enhancing the efficiency and accuracy of user integration in NextCloud systems.



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ACKNOWLEDGEMENT

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